

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion is respectfully requested.

Claims 1-3 remain active in this case, Claim 4 having been withdrawn.

In the outstanding Office Action, Claims 1-3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spierings et al (6,045,715); and Claims 1-3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spierings et al (6,045,715) in view of Suzuki (6,391,117).

Applicants respectfully traverse the outstanding grounds for rejection, because in Applicants' view, the cited prior art fails to render obvious the claimed subject matter, for the reasons next discussed.

First, the claimed method of manufacturing a liquid crystal display device subjects the liquid crystal display device to two separate and distinct etching steps, in which first and second etching machines containing respective first and second etching solutions which etch at different etching rates, i.e, faster and slower, are prepared, and the glass substrates of the liquid crystal display device are sequentially subjected first to fast etching, and then to slower etching in the respective first and second etching process machines. In the claimed invention, the two different etching treatments are intentionally carried out in two separate etching process machines. As explained in the specification, the faster etching rate treatment is performed for eliminating pits of the substrate while the slower rate treatment is performed for finely planarizing the surface of the substrate.

Furthermore, the faster etching treatment provides not only eliminating pits but roughly planarizing the surface of the substrate and effectively thinning the substrate. The planarizing and thinning by the faster etching treatment shorten the process interval so as to

improve productivity of the device. The effects mentioned above are disclosed in the specification from page 7, line 5 to page 8, line 7.

On the other hand, Spierings et al. disclose a dependence of etching time of the sample on concentration et al. of the etchant. However, Spierings et al. fail to disclose an order between the original etchant and the modified etchant, i.e., Spierings et al. fail to disclose the order of fast etching in a first process machine followed by slower etching in a second process machine, as claimed. Spierings et al. only spontaneously disclose the etching time and fails to disclose sequentially utilizing the etchant from view point of etching time. The effect of the claimed invention is realized only by the claimed sequential-etching in the claimed order. In view of this deficiency, it is respectfully submitted that pending Claim 1 clearly patentably defines over Spierings et al.

Furthermore, Spierings et al. fail to obviate the subject matter of Claim 2, which states that "... said glass substrates include electrode patterns formed on said surfaces thereof and are put together, and said etching step is carried out for at least one surface of said glass substrates." It would seem that "the mechanical treatment of sawing, lapping, drilling, filing, grinding and particularly powder blasting,"¹ taught by Spierings et al as a necessary treatment would be inimical to the electrode patterns noted in Claim 2.

Likewise, Spierings et al. fails to obviate the subject matter of Claim 3, which states that "... a ratio of said etching rate of said first etching solution to that of said second etching solution is 100:1 or more." No such teaching is provided by Spierings et al and none is cited in the outstanding Office Action.

Furthermore, Suzuki discloses an order of cleaning process, however, Suzuki fails to disclose to sequentially delineate the substrate with the two different etchants which etch at

¹ Spierings et al., column 5, lines 26-28 and Claim 1, lines 7-8 ("directing a jet of abrasive powder particles [etc.] ...")

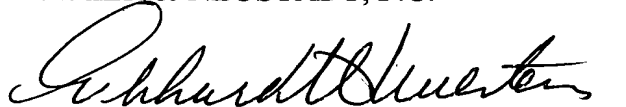
faster and slower rates, as stated in Claim 1. Indeed, the outstanding Office Action refers to column 3, lines 49-54 of Suzuki as supporting the rejection, but there it is merely noted that "the first and second cleaning vessels 5 and 6 were respectively supplied with 500 liters/hour of pure water ...," indicating that there was no difference in the "etchants" employed. It is therefore respectfully submitted that Suzuki does not cure the deficiencies of Spierings et al. in relation to pending Claim 1 and that Claim 1 patentably distinguishes over both of these references whether considered alone or in combination.

The same is believed to be true of Claims 2 and 3, as Suzuki does not cure the deficiencies of Spierings et al. in relation to pending Claim 2 and 3 either. Therefore, each of Claims 1-3 is believed to be patentably distinguishing over Suzuki and Spierings et al. whether considered alone or in combination.

Consequently, in view of the above comments, it is respectfully submitted that the outstanding grounds for rejection have been traversed. No further issues are believed to be outstanding, and the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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